

CHAPTER 12

GRIDS AND STRIP MAPS

An easy way to become familiar with the area in which you are operating is by studying a map. From the map you can determine the major roads and where they go. Also, you can find obvious landmarks such as mountains, valleys, coastlines, rivers, cities, railroads, crossroads, and bridges. The two basic types of maps are the grid map and the strip map. FM 21-26 covers map reading.

USING THE MILITARY GRID REFERENCE SYSTEM

To keep from getting lost, you have to know how to find out where you are. There are no street addresses in a combat area, but a military map can spot your location accurately. The map has lines running up and down (north and south) and across (east and west). These lines form small squares 1,000 meters on each side called grid squares.

The lines that form grid squares are numbered along the outside edge of the map picture. No two grid squares will have the same number. The precision of a point location is shown by the number of digits in the coordinates the more digits, the more precise the location; for example—

1181 is a 1,000 meter grid square.

115813 is to the nearest 100 meters.

11508133 is to the nearest 10 meters.

For instance, suppose your address is grid square 1181. How do you know this? Start from the left and read right until you come to 11, the first half of your address. Then read up to 81, the other half. Your address is somewhere in gridsquare 1181 (Figure 12-1).

Grid square 1181 gives your general neighborhood, but there is a lot of ground inside that grid square. To make your address more accurate, just add another number to the first half and another number to the other half, so your address has six numbers instead of four.

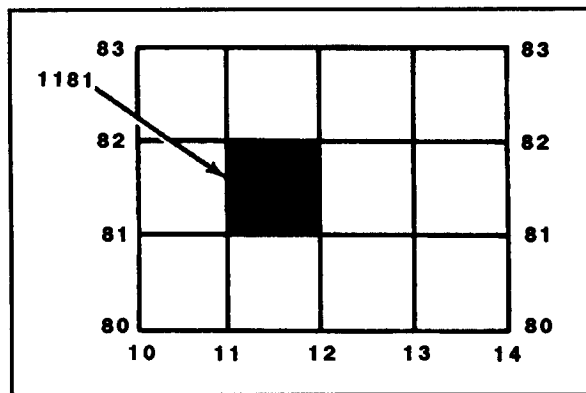


FIGURE 12-1. Grid Square.

To get those extra numbers pretend that each grid square has 10 lines inside it running north and south and another 10 running east and west. This makes 100 smaller squares. You can estimate where these imaginary lines are.

If you are halfway between line 11 and line 12, the next number is 5 and the first half of your address is 115. If you are also three-tenths of the way between line 81 and line 82, then the second half of your address is 813. (If you are exactly on line 81, the second half would be 810.) Figure 12-2 shows that if you were where the dot is in the grid square 1181, then your address would be 115813.

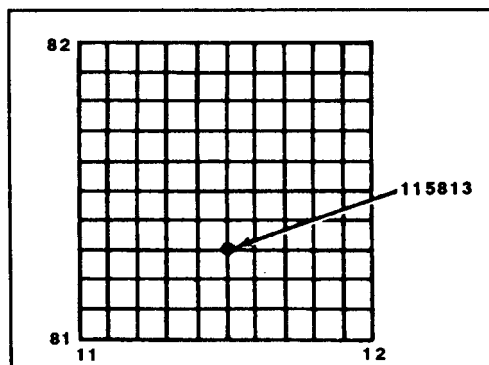


FIGURE 12-2. Point on Grid Square.

The most accurate way to determine the coordinates of a point on a map is to use a coordinate scale (Figure 12-3). You do not have to use imaginary lines because you can find the exact coordinates on the coordinate scale and protractor or the plotting scale. Located on both of these devices are two coordinate scales: 1:25,000 and 1:50,000 meters. When you use either of these devices, be sure to use the correct scale.

Use the coordinate scales to determine the coordinates of a point (Point A) already plotted on a map (Figure 12-4). First, locate the grid square in which the point is located. The number of the vertical grid line on the left (west) side of the grid square will be the first and second digits of the coordinates (11). The number of the horizontal grid line on the bottom (south) side of the grid square will be the fourth and fifth digits of the coordinates (81).

To determine the third and sixth digits of the coordinates, place the coordinate scale on the bottom grid square containing point A. Be sure the zeros of the coordinate scale are in the lower left-hand (south-west) corner of the grid square. Slide the coordinate scale to the right, keeping the bottom of the scale on the bottom grid line until point A is under the vertical (right-hand) scale.

To determine a six-digit coordinate, the 100-meter mark on the bottom scale, which is nearest the north-south grid line, is the third digit, 5. The 100-meter mark on the right-hand scale, which is nearest point A, is the sixth digit, 3. Putting these together, you have 115813.

To determine an eight-digit coordinate, which locates a point on the ground to within 10 meters, keep in mind that there are 100 meters between each 100-meter mark (number) on the scale. A short tick mark indicates 50 meters between each 100-meter mark. As shown in Figure 12-2, the grid line crosses the bottom scale on the 500-meter mark, this makes the third and fourth digits 50. If the grid line crossed the scale between the 500- and 600-meter mark, you must interpolate how many meters it is beyond 500 meters. To determine the seventh and eighth digits, read the right-hand scale where the point is on the scale. As shown, the point is between the 300- mark

and the 50-meter tick mark. You must estimate how many 10s the point is beyond the 300 mark. In this case it is 3, which makes the seventh and eighth digits, 33. Putting these together, you have 11508133.

To determine the correct two-letter 100,000-meter square identifier, look at the grid reference box in the margin of the map. Place the 100,000-meter square identifier in front of the coordinate GL 11508133 (Figures 12-5 through 12-7).

ESTIMATING THE DISTANCE

Maps are drawn to scale so by measuring the distance on the map you can estimate the distance on the ground. This scale may be indicated by a note such as "3 inches equals 1 mile." This means that 3 inches on the map equals 1 mile on the ground. You can then use a 3-inch strip of paper as a ruler to measure the number of miles on the map. Sometimes instead of a note, a ruler is printed on the map for you. Another way to show the scale is by a representative fraction; for instance, 1/63,360 or 1:63,360. This means that one unit of distance on the map equals 63,360 units on the ground. For instance, 1 inch on the map equals 63,360 inches on the ground which equals 5,280 feet or 1 mile.

United States units for measuring distance are in terms of miles, yards, and feet. In most overseas areas, the metric system is used. You need to know metric measurements and how they compare to ours because your speedometer and odometer will measure in miles. A kilometer equals a little over six-tenths of a mile. The following conversion method shows how to convert (approximately) to the metric system

- Kilometers (km) to miles (mi): multiply km by .62.

Example: $37 \text{ km} \times .62 = 22.94$ or 23 mi.

- Miles to kilometers: multiply mi by 1.6.

Example: $23 \text{ mi} \times 1.6 = 36.8$ or 37 km.

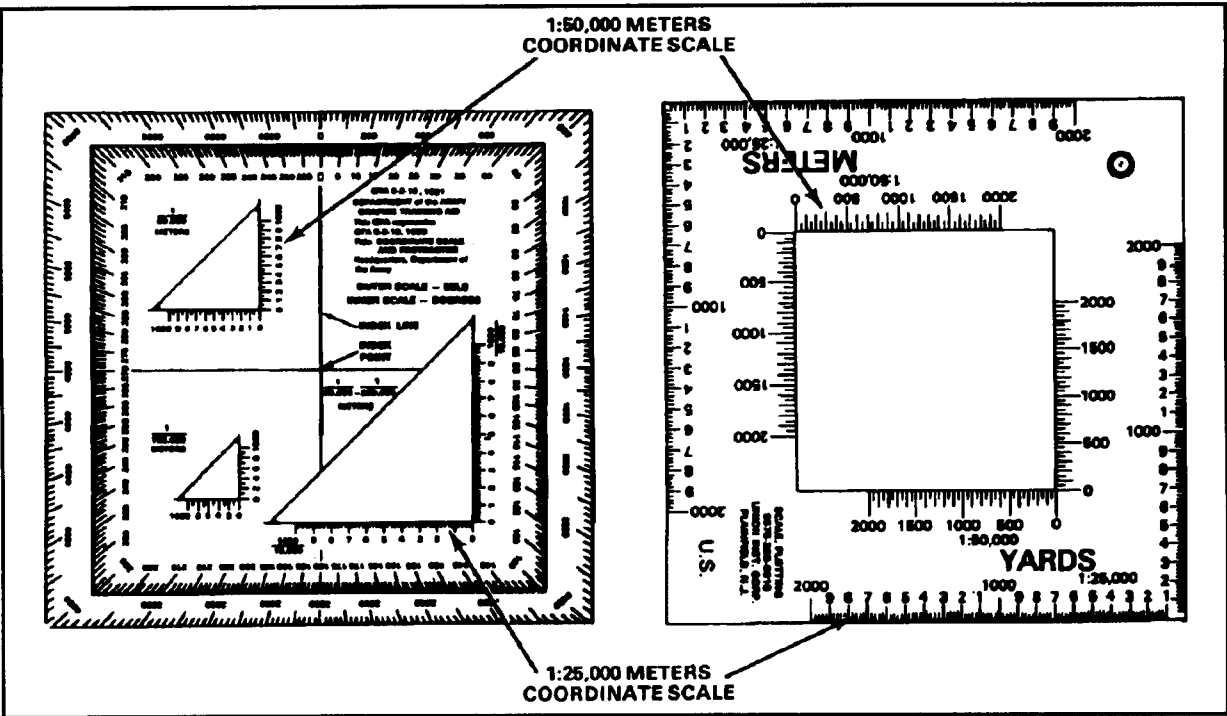


FIGURE 12-3. Coordinate Scales.

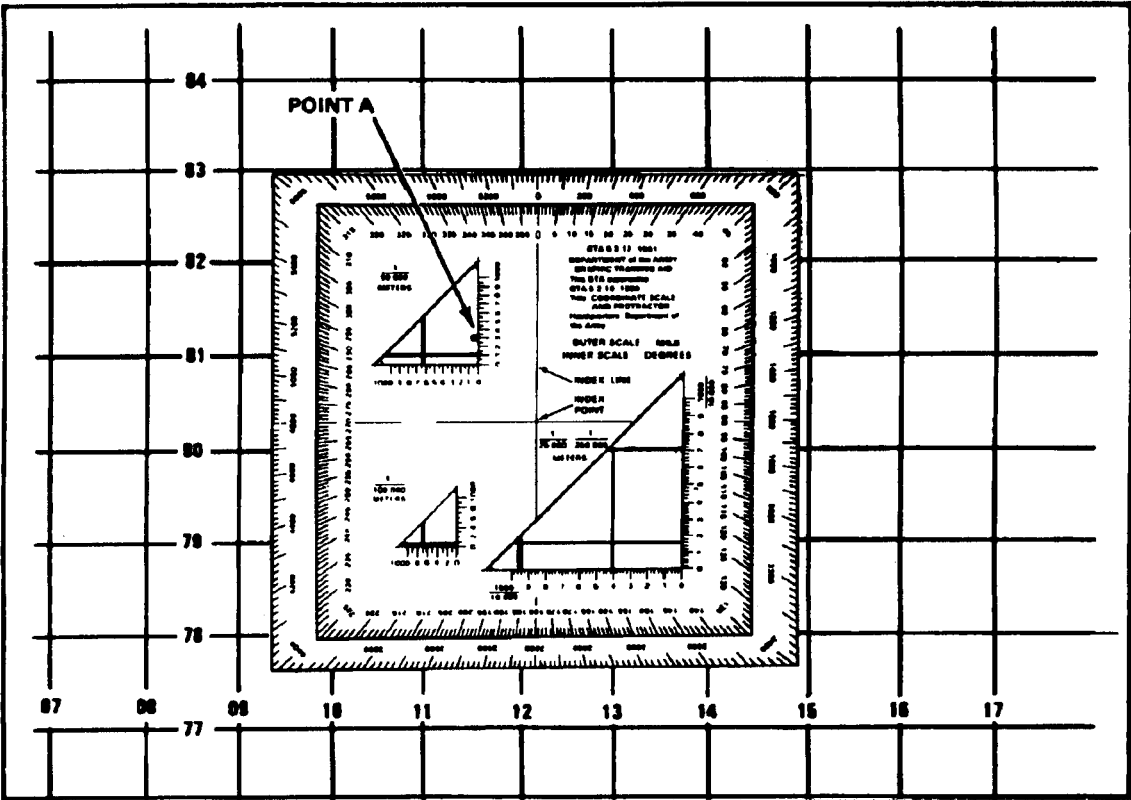


Figure 12-4. Determining Coordinates of a Point Using Coordinate Scale.

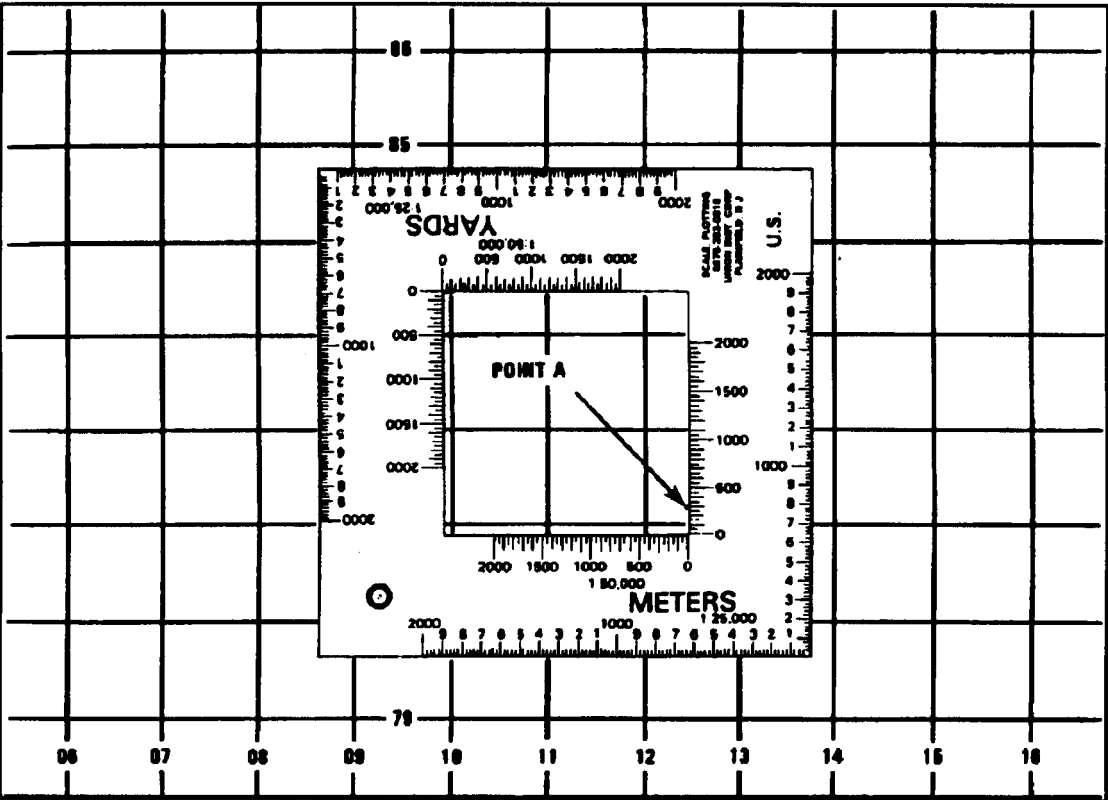


FIGURE 12-5. Locating a Point on a Grid Square.

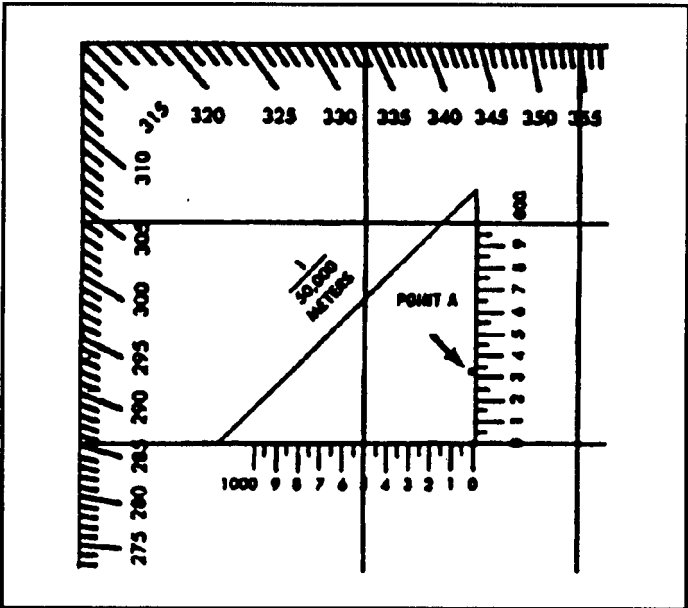


FIGURE 12-6. Coordinate Scale.

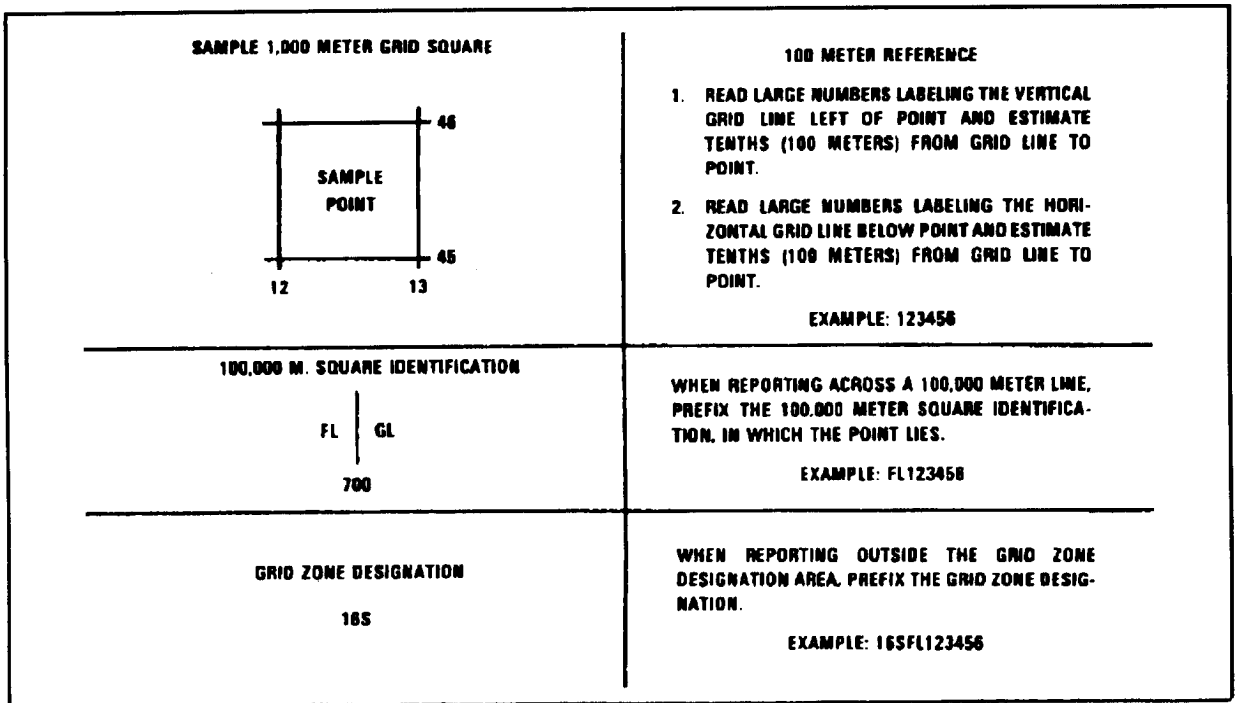


FIGURE 12-7. Grid Reference Box.

ESTIMATING THE TIME

Having estimated the distance, the next step is to figure the time you will need. In estimating time, remember that your maximum allowable speed must not exceed that shown on the caution plate in the cab or that specified by your commander. Your average speed will be less than your maximum speed, as average speed includes halts and traffic slowdowns. For detailed information, refer to FM 55-30.

RECOGNIZING MILITARY SIGNS

In addition to the signs and devices normally encountered in civilian and military driving, you must know signs peculiar to the military service. These include signs or symbols and installation markers. Military signs and symbols can be found in FM 101-5-1.

USING A STRIP MAP

The strip map (Figures 12-8 and 12-9) is a sketch of a route of march. It may or may not be drawn to scale, but it should show the identifying landmarks.

A strip map may include varying degrees of information, such as —

- Start point and release point.
- Routes and route numbers.
- Major towns.
- Major roads and crossroads.
- Mileage between points.
- Bivouac, rest, halt, and petroleum, oils, and lubricants (POL) areas.
- Directional arrows.
- Legend.

When you are assigned a driving mission, you are told which route to follow. However, you must study the map and check the road system for alternate routes so that you can make detours when necessary.

If you turn on the wrong road, your sense of direction should help you find your way. The task is much easier if you have oriented yourself properly in the beginning and have picked out landmarks along the way. Check your road map to find the road you are on and either select a new route or return to the one you were following originally.

At times, the simplest way to get on the right road may be to ask directions, but do not follow suggested shortcuts. Make your questions specific. Ask the way to a particular town or definite route. Again, a knowledge of the country is vital. Armed services police, if available, are a valuable and authorized source of information.

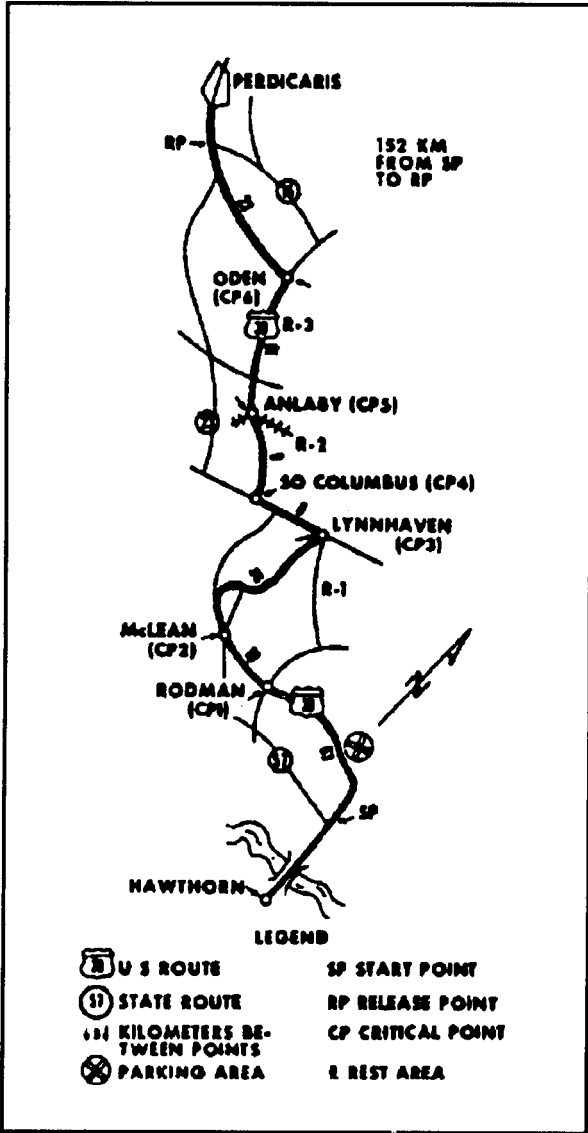


FIGURE 12-8. Strip Map.

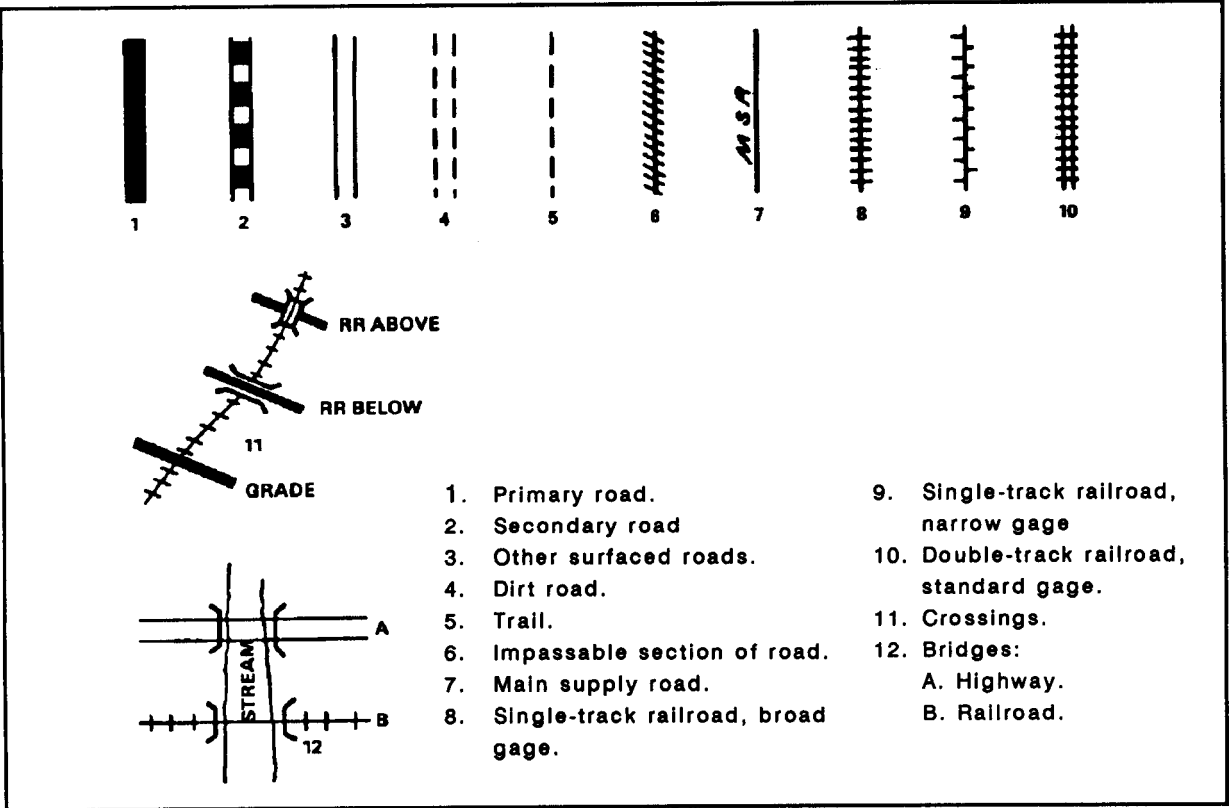


FIGURE 12-9. Strip Map Symbols.